evenly distributed between the New Jersey and Pennsylvania portions of the region. Implementation of the plan improvements results in a net 0.5% decline in VMT relative to this increase. This amounts to about 609,000 fewer vehicle-miles travelled per day on the region's highways by the year 2020. The reduction obtained is slightly greater in the New Jersey portion (-0.6%) relative to the Pennsylvania portion (-0.4%). This to some degree reflects the impact of the planned fixed guideway transit service extensions for Burlington and Gloucester Counties. The largest reduction in VMT relative to the trend condition is anticipated to occur by 2015, at which time major transit improvements counted on to reduce the VMT increase are assumed to be implemented. After 2015, continued changing demographic conditions reduce the impacts of these improvement on travel patterns.

Increasing highway travel, as indicated by the increasing VMT levels, will also lead to increasing levels of congestion. One manifestation of this growing problem is the decline in average vehicle travel speeds for both Pennsylvania and New Jersey. As the final segments of interstate and other major highways in the region (e.g., the Blue Route [I-476] and the Exton Bypass [U.S. 30]) become opened to traffic, average travel speeds in the region peak during 1996 at 28.5 mph in New Jersey and 25.4 mph in Pennsylvania. A steady decline is then exhibited for trend conditions through the year 2020 resulting in average travel speeds of 27.6 mph and 24.7 mph for New Jersey and Pennsylvania, respectively.

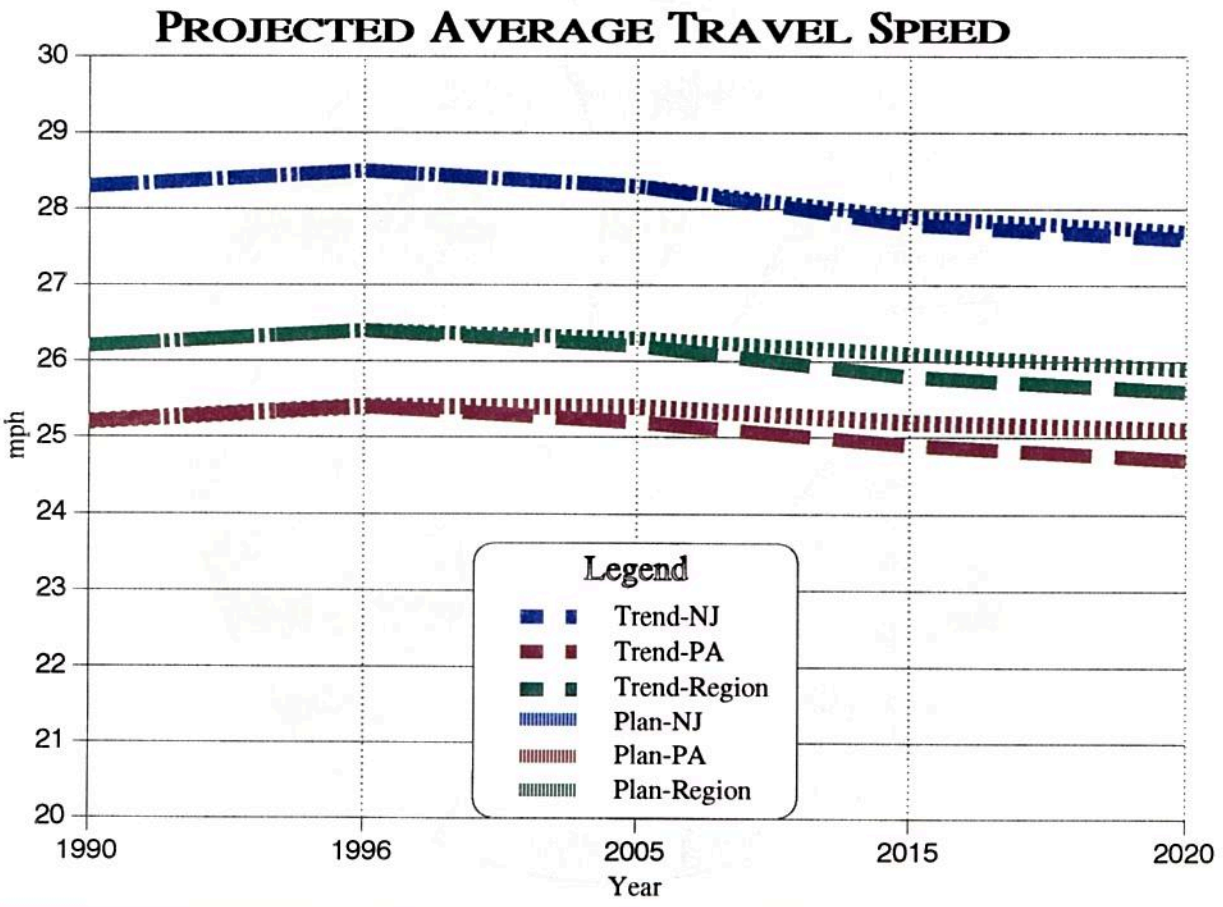
By selectively improving the highway network and increasing the quality and availability of shared ride opportunities, congestion on the region's highways diminishes to some degree. While this is not enough to compensate totally for increases in highway travel, the effects are perceptible on both sides of the river. Given the projected VMT levels for the year 2020, roughly 6,000 travel hours will be saved per day in New Jersey and 55,500 hours in Pennsylvania. These changes are gradual over the life of the plan. This difference eventually declines beyond the 2020 horizon as both the baseline and improved highway systems become congested. It should be noted that the increase in operating speeds is averaged over all types of highway facilities; therefore, it should be assumed that traffic begins to divert from congested limited access and principal arterial corridors to the lower-capacity parallel roadways in the corridor.

## AVIATION

Moderate growth of 2% per year is forecast for commercial operations, solely at Philadelphia International Airport (PHL), while growth in business and general aviation and operations is predicted to be slower at 0.6% per year. This activity will not require additional airports but points out the need for refinements and expansion at existing facilities.

These predictions are sensitive to the cost

Figure 8




These predictions are sensitive to the cost of aircraft and flying for the corporate and general aviation flyer, which in turn affects the fleet size and production levels of new aircraft. Costs of commercial service are anticipated to remain generally in line or lower in comparison to family discretionary income and business travel expenditures.

The current level of commercial traffic at PHL results in delays costing airlines millions of dollars per year. Increased volumes will require additional runway capacity and segregation of non-commercial traffic. In the suburbs, two problems exist: there is insufficient hangar storage at airports near businesses wanting to base corporate aircraft in the more dense suburbs; and, in other suburban locations, airports which provide needed ground access to the aviation system are in danger of closing, creating disenfranchised markets and aircraft crowding at remaining airports. DVRPC anticipates that, in this region, up to 13 additional airports (50% of suburban

capacity) could close by 2020.

Other issues which will push federal funding policies in future years include the need for reductions in community noise impacts which affect fleet cost and airport layout. Increased emphasis on integration of freight capacity in passenger airlines and freight-only carriers at commercial airports will diversify the role of the major airports in satisfying demand.

In the DVRPC region, since no new public airports are anticipated to be needed in the next 25 years, ground access improvements by highway and transit will compete with airside projects for scarce federal grants at selected existing facilities. Integration of passenger modes, although effectively completed at PHL, can be enhanced with transit service increases at suburban airports.

Airspace coordination of aircraft movements at PHL and surrounding airports is under constant review. Major expansions, where recommended, will only occur after airspace clearances are resolved. The new Global Positioning System (GPS) technology will improve electronic navigation and landing/takeoff safety by making satellite guidance available to any airport.

***Philadelphia International Airport***

## FREIGHT NEEDS

In recognition of the unique needs of efficient goods movement, DVRPC has created a Goods Movement Task Force with broad-based industry representation. The Task Force serves as an advocate for the goods movement community in the planning process (e.g., in the identification of improvements and formulation of long-range plans). Continuation of this task force will assure the viability of a link between planning for an effective goods movement network and goods movement service providers and users.

Specific recommendations to bolster goods movement are identified in *Moving People and Goods*, largely with the assistance of the Task Force. To this end, data collection efforts have been intensified, as demonstrated by the recent survey of trucks on area bridges. The final result of this process are annual submissions of candidate transportation improvement projects, specifically designed to facilitate commodity flows, to the appropriate agencies. In addition, a long-range plan for goods movement is under development by DVRPC. That plan will consider all parts of the freight network and how they relate to one another: airports, highways, maritime ports, and rail lines. The plan will also seek to establish a context for identifying and ranking needs peculiar to the freight network.

### *Trucking Operations*

In order to improve truck operations in the region, several issues have been identified, including: promotion of use of the turnpikes and toll facilities, allowances for heavier international containerized cargo, improved access to intermodal and shippers' facilities, implementation of a congestion management system and the upgrading of restricted bridges.

### *Rail Freight*

Railroads are an important aspect of freight intermodalism. In the Delaware Valley, issues which must be addressed to assure the achievement of maximum rail efficiencies include: initiatives to combine more freight and passenger services, means to improve rail access to and between ports, strategies to enhance highway access to intermodal terminals, improvement of highway grade crossings, improvement of terminal capacities, preservation of rights-of-way, and a doublestack route to and from points south.

### *Ports*

Among the issues confronting the port are dredging of the Delaware River and encroaching cross-purpose development. Currently, much of the Delaware River is maintained at a depth of 40 feet. As a result of deeper drafting vessels, such as oil tankers, a depth of 45 feet is now desirable. At issue are the cost of this project, ongoing maintenance of the depth, and procedures for dealing with the dredge spoils. On land, along waterfront areas such as Columbus Boulevard in Philadelphia, residential and commercial development is infringing upon port-related

facilities and is threatening their operations.

## Other Intermodal Needs

One of the most important changes in the ISTEA legislation from previous transportation initiatives is its emphasis on interconnecting modes of travel to create a more unified transportation system. Such modes include, but are not limited to, "highway elements,...ports, canals, pipeline farms, airports, marine and/or rail terminals, truck terminals and intercity bus terminals".[4] To this end, one of the management systems established by the act deals exclusively with such connections. This intermodal management system (IMS) evaluates programs, projects and activities within an urban area intended to provide intermodal connections. The IMS identifies efficiency measures and performance standards in order to develop and test various improvement strategies and actions. Future renditions of the long range plan for the DVRPC region need to be coordinated with these standards and strategies so that intermodal improvements can be fully considered.

Some of the IMS recommendations affect freight movement in the region. These projects should be considered within the context of overall freight movement needs. Other intermodal improvements affect the trip-making of individuals. These improvements may involve public transportation, highway, non-motorized and other modes. As such, they are unique and are considered separately from other types of improvements. In all instances, the potential for integration of modes should be maximized.

The intermodal needs of transit passengers must also be addressed. Transit operating policies such as information systems, hours of operation and the provision for timed transfers should be coordinated. SEPTA has recognized the need to plan for intermodal transfer in their document *A Vision of the Future: Planning for the Year 2010* (May 1991). This planning statement documents 13 existing and 31 proposed Transportation Centers intended to serve as intermodal transfer points. These locations will be listed in the initial inventory of intermodal connections included in the IMS. □

[4]Draft regulation establishing 49 CFR Part 614, Subpart G §500.703 as published in *Federal Register* Vol. 58, No. 39, Tuesday March 2, 1993 p. 12122.

# VI REGIONALLY SIGNIFICANT POLICY RECOMMENDATIONS

The initial thrust of the DIRECTION 2020 effort revolved around the identification of regional goals and objectives that would address both transportation and land use issue areas considered of importance over the period until 2020. Eight regional goals were established and 56 objectives to foster their achievement. Four of the goals pertain directly to the provision of transportation: (relieving) traffic congestion, (improving) air quality, (supporting) freight movement and (expanding personal) mobility. Major aviation system policies are included at the end of this chapter as a separate section.

A series of complementary regional policies have been developed to accomplish the regional goals and objectives. These policies can be reviewed in their entirety in *DVRPC Year 2020 Land Use and Transportation Plan: The Policy Agenda* (DIRECTION 2020 Report No. 21). Aviation policies have also been developed and can be viewed in their entirety in the *Year 2020 Regional Airport System Plan.*

This chapter contains the 74 transportation-related actions and seven aviation actions deemed regionally significant based upon the nature of the changes required and the anticipated benefits in achieving the corresponding objective. These actions are recommended to the identified organizations for consideration as appropriate strategies (together with the facility improvements) in achieving regional goals. Each action, together with the required participants are furnished in **boldface** text. More detailed guidance is also provided for portions of the region beyond the delineated transportation corridors. This section provides general guidelines regarding the acceptability of different types of transportation improvements in different areas.

## LINK TO LAND USE BY AREA TYPE

One of the key concepts employed in integrating land use and transportation planning in DIRECTION 2020 is constraining decentralized development through the selection of transportation investments. By concentrating transportation improvements within centers and along corridors, an economic inducement will be created for growth to concentrate in these areas. Conversely, the withholding of transportation improvements from other areas could create an economic disincentive for development away from the centers and corridors.

For the most part, this policy translates into a restriction against certain types of transportation investments in outlying areas (e.g., major capacity expansions). However, significant portions of the region's developed area were also not considered in the center and corridor analyses. As a result, the following table, *Transportation Improvement Matrix,* has been developed to provide more detailed guidance for the implementation of candidate transportation improvements throughout the region based on land use .

## TRANSPORTATION IMPROVEMENT MATRIX[1]

| | Roadway | Public Transit | Freight | Passenger Intermodal | Traffic Operations | Other Improve-ments[2] |
|---|---|---|---|---|---|---|
| EXISTING DEVELOPED AREAS[3] | | | | | | |
| Major Facilities[4] | ○ | ● | ● | ● | ● | ● |
| Minor Facilities | | ● | ○ | ● | ○ | ● |
| REGIONAL AND COUNTY CENTERS | | | | | | |
| Major Facilities | ○ | ● | ● | ● | ● | ● |
| Minor Facilities | | ● | ○ | ● | ○ | ● |
| REVITALIZED CENTERS | | | | | | |
| Major Facilities | ○ | ● | ● | ● | ● | ● |
| Minor Facilities | | ● | ○ | ● | ○ | ● |
| GROWTH CENTERS | | | | | | |
| Major Facilities | ○ | ● | ● | ● | ● | ● |
| Minor Facilities | | ● | ○ | ● | ○ | ● |
| FUTURE GROWTH AREAS | | | | | | |
| Major Facilities | ○ | ○ | ○ | ○ | ○ | ● |
| Minor Facilities | | ○ | ○ | ○ | ○ | ● |
| EXISTING OR PROPOSED OPEN SPACE | | | | | | |
| Major Facilities | | | | | | ● |
| Minor Facilities | ○ | ○ | | | ○ | ● |
| RURAL AND AGRICULTURAL AREAS | | | | | | |
| Major Facilities | | | | | | ● |
| Minor Facilities | | ○ | ○ | ○ | ○ | ● |

● Improvement type is appropriate in virtually all cases.
○ Improvement type is appropriate under certain conditions.
Blank indicates improvement type is usually not appropriate.

[1] Travel Demand Management improvements are implemented regionwide and are not included here.
[2] Includes Safety & Environmental Improvements, Network Reconstruction & Maintenance, Enhancements & Amenities, and Bicycle & Pedestrian Improvements, which are appropriate in all areas.
[3] Land use categories as specified in DIRECTION 2020 Guiding Regional Growth, DVRPC 1995.
[4] Highways and transit lines to be assigned to Major or Minor category designations.

## TRAFFIC CONGESTION

Traffic congestion shall be eased through the reduction of single occupant vehicles by better integrating automobile, public transit, bicycle and pedestrian facilities; encouraging changes in commuters' travel habits; and improving the efficiency of existing transportation services.

### *Policy: Provide More Non-Auto Options for Commuters*

***Improve area coverage and operation of transit service***—Most transit systems today are collections of routes which have evolved over time through a series of small adjustments, each in response to a perceived need. Now thought must be given as to how well the routes work collectively as a system, or whether the service is as competitive with the automobile as it might be. To increase market share, potential customers must be offered reliable transit services that go where they want to go, when they want to go and at a *price* they are willing to pay in terms of fare, travel time, comfort and other perceived qualities. Routes may be restructured to better match current trip patterns, reduce travel times and cut operating costs. Park and ride lots can be used to extend the reach of express routes to lower density areas. Separate rights-of-way can be provided in high density corridors to allow transit vehicles to bypass highway congestion that slows autos. New technology can be used to improve communications, information systems, fare collection and generally improve the user friendliness of the system. Strategies to improve coverage and service include the following—

- **Transit operators should use advanced fare collection systems** to reduce time needed at stops and stations, to ease payment barriers, to permit fare structures that better match the service and to collect ridership data. (SEPTA now operates an extensive pre-paid pass and automatic fare reading system.)

- **Transit operators should facilitate transfers** through coordinated scheduling, improved pedestrian flow at transportation centers, better directional signs, simplified payment procedures and use of vehicle-to-vehicle communications. The last item could reduce missed connections by alerting drivers when and where to expect transfers.

- **Transit operators should improve services in lower density areas** through simplified, timed transfers at key transfer points, demand-responsive vehicles to feed fixed routes and expansion of park and ride lots.

- **Transit operators should develop Intelligent Transportation Systems (ITS) programs** to incorporate into their operations. Such programs should include both near term and long term projects.

***Increase the number of multi-modal transportation centers and park and ride facilities***—Transportation centers are facilities where a number of different transit lines, including rail lines and/or buses, come together and are linked directly and conveniently to adjoining land uses. Park and ride lots are facilities where drivers or bicyclists can park and transfer to carpools, vanpools or transit vehicles. Both facilities serve to reduce single occupant vehicles and congestion. To increase the number of multi-modal transportation centers and park and ride facilities—

- **Municipalities should enact appropriate zoning and land use controls** to encourage an appropriate land use mix and density in the area of transit centers. The centers should blend appropriate land uses and densities, as well as circulation, parking and bicycle and pedestrian improvements needed to link transit with nearby activities.

***Encourage pedestrian, bicycle and transit-oriented land use and mixed-use development***—The Delaware Valley region has a well-established network of existing transit service, including commuter rail, light rail and bus systems. However, for the transit system to maintain its ridership or expand service to other areas, it is essential to improve the links between land uses and surrounding development. To encourage transit-oriented land use and

*Norristown Transportation Center*

mixed-use development—

**Municipalities** responsible for local area planning decisions should—

- **Establish site design standards** within a subdivision and land development ordinance that require new commercial or residential developments to be oriented toward streets with bus service or require preferential parking for carpools and vanpools adjacent to building entrances. If a development is in proximity to a rail station, the amount of required parking could be reduced and developers given incentives or bonuses to operate connecting shuttle services. Municipal design standards should also address the layout and arrangement of streets, bikeways and sidewalks, by including provisions for walkways, lighting, benches and bus turn-off facilities.

- **Grant density bonuses for developer improvements,** such as a transit center or locating adjacent to a regional rail station. An overlay zone or special district may be created at an intersection or around a rail station, to allow more intense and efficient use of land, a unique mix of uses, or to require the provision of amenities such as bus stops or shelters. Planned unit developments should be encouraged to coordinate development of larger tracts of land with new or expanded transit service and a mix of compatible uses.

**Regional transit agencies** should work with municipalities to—

- **Consider joint development proposals**, with municipalities, on land surrounding rail stations. Higher density development can both increase ridership on the transit line and provide an economic stimulus to the older communities along the rail lines.

*Policy: Use Transportation Demand Management Techniques for Corridor and System Planning*

***Establish programs aimed at reducing the total number of vehicle trips***—Three ways to reduce total trips are: combining trips, ridesharing and eliminating the need for trips. Eliminating trips can be done through **telecommuting** (working from home with the aid of computers, modems and fax machines or from a neighborhood telework center), **compressed work weeks** (working the same hours per week or biweekly period in fewer, longer days) and **land use strategies** (siting of residential development and services within walking or bicycling distance of employment centers). The following actions will reduce the total number of trips—

- **Pennsylvania and local governments should provide tax incentives to employers** to initiate telecommuting and compressed work week programs. Benefits and incentives for employees who carpool or rideshare should also be identified. New Jersey currently provides a state tax deduction.

- **State, county and municipal governments should provide tax incentives to employers** who offer appropriate incentives to employees to locate near their workplace or near convenient transit service.

- **Municipalities should revise zoning ordinances** to allow a mix of land uses and pedestrian scale activity centers. For example, commercial uses should be permitted in office parks so employees can walk or bike to restaurants, banks and stores. Residential, commercial and office uses should be permitted in the same areas so employees can live nearby, thus allowing them to walk or bike to work and to their errands instead of having to drive. Site design standards should be revised to make it easier to walk or bike to work: buildings should be located and oriented toward the street; sidewalks, bus passenger shelters and bicycle parking should be provided; and parking lots should be located behind buildings.

- **The region should study the impacts of adopting a tax on parking facilities** to be borne by automobile commuters which would provide funding for travel demand reduction programs.

*Policy: Optimize Efficiency of Existing Transportation Systems*

***Reduce traffic congestion along travel corridors and at critical intersections through incident management, access control, needed highway improvements and advanced technology systems—*** Nationally, over 50 percent of the highway delay can be attributed to incidents or accidents. Incident management, including detection, emergency response and managing traffic flow, can significantly minimize vehicle delays. In some instances, modifications to the highway network itself must be made to address congestion problems. Among these are instances where "missing links" exist in higher designed facilities. Advanced technology systems are also being used to manage recurring congestion through advanced traffic control systems, ramp metering and traveler advisory systems. In order to implement incident management, access controls and advanced technological systems, the following actions should be undertaken—

- **State DOTs should station roadside assistance vehicles** at strategic locations adjacent to all heavily traveled routes during peak travel periods.

- **PennDOT, together with county and municipal officials and the general public should develop and implement an access management plan and program** in Pennsylvania.

- **State DOTs, state and local police departments, transit operators and traffic reporting firms should collectively institute a televised information service** on regional highway and transit travel conditions.

- **State DOTs, toll authorities and transit agencies should design and implement special bus and HOV access gates and lanes at toll plazas** to reduce delays and thereby travel times for these vehicles.

- **State DOTs should develop a prioritized list of candidate maintenance projects on a biennial basis for problem locations stemming from poor geometric and pavement conditions.**

## AIR QUALITY

The region's air quality shall be improved by reducing the number of single occupant vehicles, promoting alternative travel modes and encouraging other measures that limit emissions from mobile sources.

*Policy: Facilitate Regional Compliance with the Clean Air Act Amendments of 1990*

***Integrate air quality standards into the Transportation Improvement Program***—Air quality concerns are an integral component in the region's TIP process. Each TIP undergoes a conformity analysis, required by the Clean Air Act, to demonstrate that the combined effects of implementing the projects in the TIP will meet various emissions tests and will help attain clean air standards. Many TIP projects will have a positive effect on air quality by reducing automobile trip-making and delay, mitigating congestion and decreasing vehicle miles of travel (VMT).

In order to further integrate clean air objectives into the TIP, the following is recommended—

- **DVRPC should provide for innovative programs and technologies in the TIP** that lead to reduced emissions. A placeholder should be used as a method to assure funding before the programs are specifically defined.

*Policy: Encourage the Use of Alternative Transportation Modes*

***Promote the use of public transit and ridesharing***—Congestion on the region's highways has increased considerably in the past decade, partially negating the advances in air quality attributable to today's cleaner fleet of automobiles. Reducing auto travel not only limits the direct emissions from vehicles, but also reduces emissions by increasing average speeds (at which emission rates are lower). Promoting the use of ridesharing and high occupancy vehicles can be an effective means to reduce congestion and improve air quality.

Several steps can be taken for the region to increase the use of high-occupancy vehicles—

- **Municipalities and counties should design and adopt regulations** which encourage the use of transit and share-a-ride through development controls.

- **State and county governments and transit operators should address travel needs** in areas where transit services have been discontinued due to insufficient funds or reasons other than local opposition.

- **Transit operators, DVRPC and interest groups should advocate changes in impact fee laws** to give priority to transit improvements where transportation related improvements are needed from developers to mitigate the impact of the project. In Pennsylvania, this would require amendment of the existing impact fee law.

- **DVRPC, together with the states and the counties, should use the flexible funding provisions of ISTEA** to provide additional funding for transit operators while maintaining and meeting highway needs and working within the financial constraints of the TIP.

***Improve and expand bicycle and pedestrian facilities***—Bicycle and pedestrian facilities should be integral components of the region's transportation network. Providing convenient pedestrian access and safe facilities for bicycles can provide options for non-automobile travel and help to improve air quality. Both the Pennsylvania and New Jersey Departments of Transportation have recognized the importance of these alternate modes of travel by establishing Bicycle and Pedestrian Coordinators in their offices.

For the region to improve and expand bicycle and pedestrian options—

- **PennDOT and NJDOT should establish policies for bicycle access on the roads and bridges** of the region where such access is appropriate, compatible and safe for both cyclists and motorists. Existing roadways where access is feasible and the types of roadways or facilities where access should be accommodated as a component of future improvements should be identified.

- **DVRPC should identify and map existing trails and facilities**, with the information made available widely throughout the region, to encourage the active use and upkeep of such facilities.

- **The DVRPC long range plan should identify potential future facilities** that would help create integrated and coordinated linkage of bicycle and pedestrian facilities. Links should be focused on the major origins and destinations of trips, such as population centers, employment centers, shopping centers, schools, parks and transportation centers.

- **Regional employers should encourage the use of bicycles** for commuting by providing storage facilities, showers, lockers, emergency roadside assistance, a "guaranteed ride home" program for emergencies or inclement weather and other employee benefits.

- **Municipalities should utilize zoning and site design standards** in subdivision ordinances to require pedestrian and bicycle access and facilities in new or expanded developments.

*Policy: Encourage the Use of Transportation Control Measures throughout the Region*

*Expand the use of Employer-based Share-A-Ride (SAR) Programs*—SAR can be a key strategy to reduce the number of single occupant vehicles in the region. The mode of travel for work-based trips can be greatly influenced by employer policies and incentives. An employer's decision about work place location, for example, determines if employees can take transit to work or if they can walk to nearby locations to eat or run errands. If an employer fully subsidizes employees' monthly parking charges but does not subsidize any costs for employees who take transit or bicycle to work, employees may be more inclined to drive. The following actions will improve the effectiveness of employer-based SAR—

- **Pennsylvania and local governments should provide tax incentives** for employers who implement SAR programs. New Jersey currently provides a state tax deduction.

- **Transit operators and DVRPC should encourage TMAs and regional employers to develop regional guaranteed ride home programs.**

- **Employers, developers, homeowners' associations, states, local governments, civic groups and TMAs should establish local community transit services** in residential areas surrounding employment centers. These services must be coordinated with regional transit services.

*Maximize the use of low-emission vehicles and low-polluting fuels*—Attaining the standard for ozone in large metropolitan areas requires a substantial decrease in the emissions of precursor pollutants. These reductions cannot come through a decrease in demand alone and will require the use of cleaner vehicles and fuels. Currently, states in the northeastern United States are deliberating over the adoption of more stringent new car emissions standards as recommended by the Ozone Transport Commission. Although several requirements of the CAAA will bring cleaner vehicles and fuels to the region, more can be done through local initiatives such as those described below—

- **State DOTs, fleet operators and gasoline retailers should increase the availability and visibility of alternative fuel refilling locations** throughout the region. These groups could support initiatives to establish I-95 as an alternative fuels highway along the Northeast Corridor.

- **NJDEP and PADER should examine ways of retiring or minimizing the use of automobiles built before 1980,** which emit hydrocarbons at much higher rates than newer vehicles.

- **Congress should increase the relative cost of new vehicles** which emit the most pollutants and decrease the cost of cleaner vehicles through a *feebate* program which provides a surcharge on more polluting cars and a bonus or tax break on more efficient vehicles. Each state should also consider a feebate program.

***Increase the effectiveness of measures such as Enhanced Inspection and Maintenance***—In addition to the benefits derived from transportation control measures which alter the transportation infrastructure and/or the costs of travel, other measures such as vehicle inspection and maintenance programs should be strengthened. It is important that they be carried out, particularly where they represent a more efficient means of improving regional air quality. Some of the steps include the following—

- **States and DVRPC should support federal requirements** for further improvements to the design and manufacture of motor vehicles in order to minimize emission rates.

- **State inspection programs should consider additional tests such as inspection of the fuel tank and intake line and air conditioning systems** for vapor and coolant leaks, respectively, in older cars.

## FREIGHT MOVEMENT

Freight movement in the region shall be supported by promoting cooperation among freight movement interests and developing an intermodal regional freight movement plan with improvements to air, highway, port and rail systems.

*Policy: Increase Level of Public and Private Investment in Regional Freight Movement Activities*

***Encourage the participation of freight interests in the joint public/private programming of transportation improvements***—The importance of freight movement to the regional economy requires the coordination of both investment decisions and operational issues between the public and private sectors of the goods movement community. DVRPC has begun this necessary coordination by involving freight interests in the planning process through the Goods Movement Task Force (GMTF), which consists of freight shippers and haulers, public planning agencies and regional port and toll authorities. As specific freight movement projects are identified opportunities to leverage public funds with private or authority sources will be explored.

- **DVRPC and GMTF should periodically perform a joint analysis of public-private partnership opportunities** in the region.

- **State DOTs, in conjunction with DVRPC and the GMTF, should seek data to augment the Intermodal Management System** to reflect the comprehensive needs of all freight movement activities.

***Program and integrate needed freight movement projects into the Transportation Improvement Program process***—Many projects which facilitate freight movement can be found in the TIP although they are not expressly identified as such. Some of these projects include: rail crossing hazard elimination projects; replacement or rehabilitation of weight-restricted bridges; intersection improvements which increase turning radii; and bypasses of congested town centers and business districts. In order to promote a more complete representation of freight issues in the TIP process,

- **DVRPC, in consultation with the GMTF, should program freight improvement projects in the TIP.**

*Policy: Create Opportunities for New and Expanded Businesses which Utilize Freight Services*

***Establish a unified marketing program for existing freight systems***—The Delaware Valley possesses a diverse and extensive freight movement network. This network, and a strategic geographic location, give the region great potential to serve as a major goods distribution center. The regional network includes three Class I railroads, three commercial and 12 reliever airports, diversified maritime port facilities and a comprehensive network of highway routes suitable for trucks. The recently undertaken *high-and-wide* container initiative to extend track clearances in Pennsylvania typifies the quality of freight services available in the region. Since there is intense national competition for goods movement operations, it is necessary to market existing services and capabilities to potential markets.

To promote the region's potential as a major center of freight operations, the following strategies should be pursued—

- **State and local economic development offices should develop a high-quality, multi-faceted marketing program** detailing the diversity of the region's freight system and economic resources.

- **Local economic development offices and the GMTF should encourage targeted marketing initiatives** aimed at special niche markets.

- **Local economic development offices, in consultation with the GMTF, should survey both current and potential customers** to determine any deficiencies of the region's freight system.

***Coordinate investments and operational planning of oversight authorities responsible for freight movement***—The many factors which impact goods movement indicate the need for close coordination among the numerous organizations in the industry. The need is

made more acute by increases in intermodal freight operations, in which freight is conveyed by more than one mode to its final destination. Intermodal movements require the coordination of investment decisions and operations issues among public and private sectors of the goods movement community.

To assure adequate coordination and dialogue among the many organizations within the freight movement industry, the following steps are recommended—

- **DVRPC should survey members of the GMTF to examine the goods movement network** in its entirety, identifying and re-enforcing the relationships between the various modes.

*Policy: Create Efficient Intermodal Freight Facilities throughout the Region*

***Reduce transfer time to move freight between different transportation modes***—Time is a critical aspect of freight operations. Shelf-life of products can be extremely limited; and customers demand on-time delivery of commodities. Moreover, the technique of *just-in-time* delivery of production resources is becoming more commonplace. Maritime, truck and rail operators should work to provide efficient and rapid transfers of goods between them. To minimize transfer time to move freight between different transportation modes, the following measures should be pursued—

- **State and local economic development offices and the GMTF, in cooperation with private sector interests, should identify and support all necessary facility and corridor upgrades** through the public and private capital programming processes.

- **Intermodal facility owners and operators should regularly examine access, labor and procedural issues** to minimize turnaround times.

- **State DOTs and county and municipal governments should ensure adequate directional signage, truck rest areas and other amenities** near intermodal facilities. DVRPC and GMTF should provide sufficient planning support and advocacy for these improvements.

***Improve data and technology sharing among public and private freight interests***—Decision-makers in the goods movement industry must confront numerous issues, including global events and trends, trade agreements and an ever-growing number of key players and agencies. Maintaining the region's competitiveness under these circumstances is challenging. Cooperation through pooling resources, information and technology, is essential to maintain the region's extensive goods movement capacity.

To promote continued partnerships and information sharing in the goods movement community—

- **DVRPC and GMTF should develop future scenarios** of freight movement systems and identify associated infrastructure needs and regulatory issues.

- **States, counties, GMTF and others in the goods movement industry should establish a public/private consortium** to pool resources to identify, develop and implement useful technological innovations.

- **State DOTs should centralize traffic monitoring and communications** for freight movements within the region. They should also encourage the industry trend toward appropriate ITS technologies.

## MOBILITY

Personal mobility shall be enhanced through improving the access to and efficiency of the region's transportation network and ensuring the safety and security of the systems' users.

*Policy: Promote Coordination and Integration of All Transportation Systems*

***Establish opportunities for connections among transportation modes***—Facilitating travel within the region while reducing dependence on single-occupant vehicles requires alternatives to automobile-only or transit-only travel. Within the Delaware Valley there are numerous transit routes, both rail and bus, that offer such an alternative. Making these routes efficient to use, however, requires that they be in as direct a line between origin and destination as possible. To accomplish this, transit systems should be viewed as a network of inter-connecting major routes, fed by multiple smaller routes including individual automobiles, taxis and small private buses. In this context, the highway system functions as an integral part of the transit system.

To be effective, this view of the transit system needs to focus more attention on the nodes that serve as connecting points between the feeder system and the intersecting transit routes.

- **Transit operators should evaluate local bus service in relation to the network of regional rail lines and longer distance and express bus routes** and revise them to provide feeder service to designated transfer stations or stops, where practical.

- **Municipalities, transit operators, civic and advocacy groups should develop and implement pedestrian/bicycle circulation plans** around major rail stations and transit corridors and integrate these nodes into adjacent bicycle network facilities where applicable.

- **State DOTs and counties, in consultation with relevant municipalities, should identify and construct a system of park and ride lots** for carpool, vanpool or local bus services. This would include a hierarchy of regional and local lots distributed throughout the region. *Regional* lots should offer at least 100 parking spaces whereas *local* lots would offer less than 100. Both should include facilities for bicycle access and storage.

***Improve scheduling and operations to accommodate intermodal movements—*** Travel from one point in the region to another by transit often requires transferring from one route to another. To promote the use of transit and reduce our dependence on single-occupant vehicles, it is important to coordinate transit routes so that connections can be made with the least amount of inconvenience to the traveler. Coordination of services and routes must address three factors: (1) locating transfer points that result in the fewest number of transfers needed to reach one's destination; (2) scheduling that insures the least amount of delay between vehicles when completing a multi-vehicle trip; and (3) providing real-time information to the traveler regarding schedules and on-time performance.

Strategies to improve scheduling and operations to accommodate intermodal movements include the following—

- **Transit operators should conduct assessments of on-time performance for all services.** These assessments would locate points where delays recur and would provide strategies to address these conditions.

- **Transit operators should construct and operate a system of *Intelligent Rider* information displays** at train stations, key bus stops, transportation centers, major transfer points and major multi-route bus stops. These visual display units would identify the schedule of trips serving that location (for example, within one half hour of the current time) and the status of each (arrived, on-time, delayed, canceled, etc.). The displays could be updated electronically, by either the passage of the scheduled bus or from a system control center using cellular technology.

- **Transit operators should devise policies and procedures to facilitate easy or *seamless* transferring between systems.** By creating a universal transfer instrument, all transfer charges could be equalized. All operators would honor each other's transfer instruments, thus saving passengers time and expense.

***Policy: Provide System Accessibility for All Population Segments***

***Increase the affordable mobility options for the young, the elderly and the poor—***Too often, access to the transportation system is either not available or severely limited for some segment of the population. The young, the elderly, the poor, the unemployed or underemployed may be unable to pay

typical transit fares or purchase and maintain a car.

The following actions will increase affordable mobility options for the young, the elderly, the disabled and the poor—

- **States, counties, municipalities and transit and paratransit operators should support the formation of jitney services** in appropriate areas.

- **States, counties, municipalities, employers, developers and transit operators should improve the environment for bicycling** by providing paved shoulders and wider curb lanes on roads, secure bicycle parking, shower facilities and bicycle transport capabilities on transit vehicles.

- **States, counties, municipalities and developers should improve the environment for pedestrians** by providing pathway connections between residential communities, commercial destinations and transit stations and stops. Zoning and land development ordinances should be revised to make walking distances shorter by locating buildings next to roads and requiring that parking lots be behind buildings.

- **States, transit operators and the private sector should explore fare-free zones in conjunction with the creation of improvement districts.** This approach, as employed in Portland, Oregon, would reduce operating costs substantially: no fare instruments, cashiers, ticket sellers, fare machines, or turnstiles would be needed. State, local and county governments and private sector employers, businesses and developers would provide subsidies, if necessary, to replace the lost fare revenue.

***Comply with the regulations of the Americans with Disabilities Act***—The Americans With Disabilities Act of 1990 (ADA) is a comprehensive civil rights law which prohibits discrimination on the basis of disability in employment, state and local government services, public accommodations, transportation and telecommunications. Titles II and III of the ADA require a broad variety of buildings, facilities and vehicles to be accessible to individuals with disabilities. Title II requires, among other things, that newly constructed and altered buildings and facilities used by state and local government agencies and publicly operated bus and rail systems be accessible to individuals with disabilities. Title III requires, among other things, that newly constructed and altered restaurants, hotels, theaters, shopping centers and malls, retail stores, parks, private schools, day care centers, other similar places of public accommodation, commercial facilities (non-residential facilities affecting commerce) and privately operated public transportation services be accessible to individuals with disabilities.

The following actions should be taken to comply with the regulations of ADA to provide transportation system accessibility for all population segments—

- **State DOTs, counties and municipalities should improve the accessibility of roads, streets, bridges and sidewalks for disabled persons** in conjunction with facility repair operations, or as otherwise allowable. Sidewalks and curb cuts should be provided in developed areas and roadside emergency telephones, rest areas and park and ride lots should be accessible to disabled persons. Pedestrian traffic signals should be usable by persons with a vision handicap.

*Policy: Ensure Safety and Security of Highway and Transit Users*

***Reduce the number of accidents and fatalities which occur on highways and transit systems***—Measures to improve highway safety (including that of transit vehicles which operate on public streets) need to address the three principal components of driver, highway and vehicle. Each contributes to accidents and can be improved. Trains and other fixed guideway vehicles, which generally run on segregated rights-of-way, have different requirements: Reliable signaling and communications are essential for safe operation, especially at high speeds or with short time periods between scheduled vehicles.

Strategies to reduce accidents include the following—

- **State and local law enforcement agencies should provide toll-free cellular and CB monitoring** for highway users who wish to anonymously report accidents, reckless driving and unsafe highway conditions.

- **State offices for highway safety, local media and private organizations such as auto clubs should educate the driving population through ongoing public service announcements,** thereby improving driving behavior and reducing improper vehicle maintenance.

- **State licensing bureaus and police departments should prevent continued licensing of unsafe commercial drivers.** Careful licensing procedures should be combined with procedures to detect drug and alcohol abuse.

- **States should strengthen vehicle safety inspection programs.**

- **State licensing bureaus should periodically test all drivers** and provide for more frequent testing of older drivers.

- **State governments should pursue legislation** to require insurance companies to provide reduced rates for drivers who voluntarily take safe driving courses and who retest their skills when renewing their driver's license.

*Reduce transit-related crime rate*—Although the incidence of serious crime within transit systems is fairly low, non-violent acts, minor annoyances and assaults on the senses are not. The perception of personal risk pervades parts of the system, especially during evening and night. In order to preserve or expand the market for public transportation, operators must have effective programs to ensure the personal security of passengers, who will choose other modes unless they feel safe while using the system.

Strategies to reduce crime and improve security include the following—

- **AMTRAK should repair/install centerline fencing at all stations** to prevent passengers from crossing tracks.

- **SEPTA and NJ TRANSIT should secure rail rights-of-way** on commuter rail lines through the use of fences, electronic gates and security systems.

- **NJ TRANSIT and SEPTA should install closed-circuit television monitors with available voice communications in unattended rail and transit stations.** Such devices can act as a strong deterrent to crime.

- **Transit operators should increase the presence of uniformed police** in stations and aboard vehicles during late evening hours. Their presence has been proven to lower crime and other incidents and reassures passengers using the system.

- **Municipalities, transit operators and developers should work toward compatible mixes of activities around transit stations** through the sale or lease of development rights and other means. Compatible activities would add to the security of the transit systems by maximizing pedestrian traffic near the stations during their regular hours of operation.

*Increase public awareness of security programs*—Security programs work best when the public has an understanding of how they work, who administers them, how to gain access when emergencies arise and that responses can be expected.

Steps that can be taken to improve the effectiveness of security programs include the following—

- **Transit operators should ensure that emergency telephones are available at all rail and transit stations** and **that trains, buses and trolleys are equipped with telecommunication equipment** that uses silent alarms and can transmit the vehicle's location. They should also provide the means to allow passengers to communicate directly with the driver on multi-car trains.

- **State DOTs, transit operators and toll authorities where applicable should ensure that all park and ride facilities have adequate lighting and telephones** for emergency use. Video monitors can also be used at high crime locations or where sight distances are restricted.

- **State DOTs and toll authorities should install and monitor roadside emergency telephones** at regular intervals along limited access highways. Such telephones are common along toll roads, but less often seen along other highways where the distance to the next interchange may be large and access to local land use restricted.

## AVIATION

This section encompasses major policy recommendations for public use airports. These policies have been reproduced from the *Year 2020 Regional Airport System Plan* which offers a more comprehensive examination of airport system needs. The reader is referred to this document for more detailed information. □

- **Regional support should be obtained in the federal government for prompt FAA participation in the Runway 8-26** addition at Philadelphia International Airport.
- **Public acquisition of privately-owned airports which either provide critical ground access coverage in suburban areas or represent additional FAA reliever facilities should be considered.**
- **Storage capacity—ramp space and hangars—and runway lengths should be expanded** at selected airports to accommodate business aircraft needs.
- **Separation of the Federal Aviation Trust Fund grants from competition with surface transportation should be preserved.**
- **NAVAIDS and precision approach capabilities should be enhanced** where needed for business aircraft.
- **Additional heliport capacity in area CBDs should be pursued** to supplement existing capacity at Philadelphia International Airport.
- **Municipal zoning protection should be pursued** throughout the region to minimize residential encroachment on remaining airports.